

National Aeronautics and  
Space Administration

**Lewis Research Center**  
Cleveland, Ohio  
44135

**NASA**



Reply to Attn of 1620

June 30, 1988

US Environmental Protection Agency  
Attn: Jeanne Griffin  
Region V  
230 S. Dearborn Street (5HR-11)  
Chicago, IL 60604

SUBJECT: Preliminary Assessment Reports for  
Lewis Research Center and Plum Brook Station

Enclosed are the Preliminary Assessments for Lewis Research Center and Plum Brook Station. The delay in the delivery of these documents was caused by the late arrival of the Preliminary Assessment for Plum Brook Station, and some confusion as to who would forward them to you.

If there are any questions, please contact me at FTS 297-3015.

A handwritten signature in cursive script that reads "Albert B. Smith".

Albert B. Smith  
Chief, Environmental Health  
and Chemical Analysis Branch

2 Enclosures



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE OH 02 SITE NUMBER 080005035

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) NASA - Lewis Research Center		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 21000 Brookpark Road			
03 CITY Cleveland	04 STATE OH	05 ZIP CODE 44135	06 COUNTY Cuyahoga	07 COUNTY CODE	08 CONG DIST 19
09 COORDINATES LATITUDE 41° 29' 51"		LONGITUDE 81° 41' 50"			
10 DIRECTIONS TO SITE (Starting from nearest public road) Interstate 71 to Brookpark Road west to Lewis Research Center, adjacent to Cleveland Hopkins Airport					

III. RESPONSIBLE PARTIES

01 OWNER (If known) National Aeronautics and Space Administration		02 STREET (Business making residential) 21000 Brookpark Road			
03 CITY Cleveland	04 STATE OH	05 ZIP CODE 44135	06 TELEPHONE NUMBER (216) 433-3015		
07 OPERATOR (If known and different from owner)		08 STREET (Business making residential)			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER ( )		
13 TYPE OF OWNERSHIP (Check one) <input type="checkbox"/> A PRIVATE <input checked="" type="checkbox"/> B FEDERAL NASA (Agency name: ) <input type="checkbox"/> C STATE <input type="checkbox"/> D COUNTY <input type="checkbox"/> E MUNICIPAL <input type="checkbox"/> F OTHER (Specify: ) <input type="checkbox"/> G UNKNOWN					
14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) <input checked="" type="checkbox"/> A RCRA 3001 DATE RECEIVED 11/13/80 MONTH DAY YEAR <input type="checkbox"/> B UNCONTROLLED WASTE SITE (CERCLA 103(c)) DATE RECEIVED / / MONTH DAY YEAR <input type="checkbox"/> C NONE					

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE 11/26/85 MONTH DAY YEAR <input type="checkbox"/> NO		BY (Check all that apply) <input type="checkbox"/> A EPA <input type="checkbox"/> B EPA CONTRACTOR <input checked="" type="checkbox"/> C STATE <input type="checkbox"/> D OTHER CONTRACTOR <input type="checkbox"/> E LOCAL HEALTH OFFICIAL <input type="checkbox"/> F OTHER (Specify: )			
Note: PCB Compliance Inspect CONTRACTOR NAME(S) _____					
02 SITE STATUS (Check one) <input type="checkbox"/> A ACTIVE <input type="checkbox"/> B INACTIVE <input type="checkbox"/> C UNKNOWN		03 YEARS OF OPERATION 1945 Present UNKNOWN BEGINNING YEAR ENDING YEAR			
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN OR ALLEGED Multiple sources from activities occurring in "South 40" area including landfilling, storage of drums, tanks, equipment, coal pile, batteries, salt dome, and PCB contamination at Substation A. Improper containment of hazardous substances and wastes at Buildings 209, 109, 136, 301, 302 and 35 observed. Also, mercury usage prevalent throughout facility with lack of proper management and control, no clear indication of proper cleanup of spill incidents (no sampling or testing).					
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION Current handling and storage practices could create an environmental hazard with "empty" drums stored on their side and several areas observed where mixed hazardous wastes are stored without secondary containment. Drums stored near waterways in nearly all situations observed. There is also potential for groundwater contamination. Hydrazine located next to firing range is an eminent hazard.					

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.) <input checked="" type="checkbox"/> A HIGH (Inspection required promptly) <input type="checkbox"/> B MEDIUM (Inspection required) <input type="checkbox"/> C LOW (Inspect on time available basis) <input type="checkbox"/> D NONE (No further action needed, complete current disposition form)			
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VI. INFORMATION AVAILABLE FROM

01 CONTACT Al Smith	02 OF (Agency/Organization) NASA - Lewis Research Center		03 TELEPHONE NUMBER (216) 433-3015	
04 PERSON RESPONSIBLE FOR ASSESSMENT David Michael Finton	05 AGENCY	06 ORGANIZATION Ebasco/ Envirosphere	07 TELEPHONE NUMBER 614-761-2005	08 DATE / / MONTH DAY YEAR



<b>01 PHYSICAL STATES</b> <i>(Check all that apply)</i>	<b>02 WASTE QUANTITY AT SITE</b> <i>(Measures of waste quantities must be independent)</i>	<b>03 WASTE CHARACTERISTICS</b> <i>(Check all that apply)</i>
<input checked="" type="checkbox"/> A SOLID <input checked="" type="checkbox"/> B POWDER FINES <input checked="" type="checkbox"/> C SLUDGE  <input type="checkbox"/> D OTHER _____ <i>(Specify)</i>	<input type="checkbox"/> E SLURRY <input checked="" type="checkbox"/> F LIQUID <input type="checkbox"/> G GAS  TONS _____  CUBIC YARDS _____  NO OF DRUMS <u>8</u>	<input checked="" type="checkbox"/> A TOXIC <input checked="" type="checkbox"/> B CORROSIVE <input checked="" type="checkbox"/> C RADIOACTIVE <input checked="" type="checkbox"/> D PERSISTENT  <input checked="" type="checkbox"/> E SOLUBLE <input type="checkbox"/> F INFECTIOUS <input checked="" type="checkbox"/> G FLAMMABLE <input checked="" type="checkbox"/> H IGNITABLE  <input checked="" type="checkbox"/> I HIGHLY VOLATILE <input checked="" type="checkbox"/> J EXPLOSIVE <input checked="" type="checkbox"/> K REACTIVE <input checked="" type="checkbox"/> L INCOMPATIBLE <input type="checkbox"/> M NOT APPLICABLE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	2000	gallons	Stored in concrete pit at Bldg. 415
OLW	OILY WASTE			
SOL	SOLVENTS	440*	gallons	Mixed solvents, acetone, MEK,
PSD	PESTICIDES			toluene, methylene chloride and
OCC	OTHER ORGANIC CHEMICALS			1,1,1-Trichloroethane
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	*Special note: There were several (20 or more) drums of wastes not inventoried in staging areas throughout the facility (i.e., 109, 301, 302, 35).		
BAS	BASES			
MES	HEAVY METALS			

[illegible]

CATEGORY	O1 FEEDSTOCK NAME	O2 CAS NUMBER	CATEGORY	O1 FEEDSTOCK NAME	O2 CAS NUMBER
FDS	Acetone	77-64-1	FDS	1,1,1 Trichloroethane	25323-89-
FDS	Toluene	108-88-3	FDS		
FDS	Hydrazine	30-20-12	FDS		
FDS	Methyl ethyl ketone		FDS		

Contractor Cortez III files.



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
OH 080005035

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED undefined 04 NARRATIVE DESCRIPTION

Multiple potentially contaminating activities is "South 40" area, improper outside storage with no secondary containment at Buildings 415, 209, 109, 136, 301, 302 and 35.

01 ☒ B SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED undefined 04 NARRATIVE DESCRIPTION

Storm sewer system has been impacted by several spills over the history of the site. Current drum handling/storage practices near waterways may be resulting in surface water contamination from runoff.

01 ☐ C CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 ☒ D FIRE EXPLOSIVE CONDITIONS on-base 02 ☐ OBSERVED (DATE 2/24/88) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED staff 04 NARRATIVE DESCRIPTION

1. Storage of highly volatile (hydrazene) substances and other mixed hazardous wastes was observed at Building 415.
2. Mixing of hazardous wastes in unconfined storage areas was observed at Buildings 109, 136, 301, 302, and 35.

01 ☐ E DIRECT CONTACT 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 ☒ F CONTAMINATION OF SOIL undefined 02 ☒ OBSERVED (DATE 2/24/88) ☐ POTENTIAL ☐ ALLEGED  
03 AREA POTENTIALLY AFFECTED (Acres) 04 NARRATIVE DESCRIPTION

(See Continuation)

01 ☒ G DRINKING WATER CONTAMINATION on-base 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED staff 04 NARRATIVE DESCRIPTION

Discussions with staff indicate a coliform problem with water supplied to Buildings 202, 203 and 204 at the "South 40" area. Low levels of residual chlorine have been observed due to limited use of an oversized water distribution system.

01 ☒ H WORKER EXPOSURE/INJURY on-base 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 WORKERS POTENTIALLY AFFECTED staff 04 NARRATIVE DESCRIPTION

1. Improper mixing of wastes in storage may result in worker exposure at Building 415.
2. Feedstock and waste handling practices observed at Building 109 could cause worker exposure.

01 ☐ I POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

None observed or alleged.



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
OH 080005035

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ~~X~~ J DAMAGE TO FLORA  
04 NARRATIVE DESCRIPTION

02 ☒ OBSERVED (DATE 1987 photo)

☐ POTENTIAL

☐ ALLEGED

Distressed vegetation observed in photographs of "South 40" area taken in 1987 (see Attachment 1).

01 ~~X~~ K DAMAGE TO FAUNA  
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

The Peregrine Falcon is the only endangered vertebrate potentially threatened from exposure at the site. The Peregrine Falcon is known to migrate along rivers and lake shores of Ohio (Source: "Environmental Resources Document", May 1983).

01 ~~X~~ L CONTAMINATION OF FOOD CHAIN  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

Fishing may occur in Abram Creek or Rocky River.

01 ~~X~~ M UNSTABLE CONTAINMENT OF WASTES

(Spills, runoff, standing liquids, leaking drums)

03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

04 NARRATIVE DESCRIPTION

(See Continuation)

01 ☐ N DAMAGE TO OFFSITE PROPERTY  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

None observed or alleged.

01 ~~X~~ O CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

04 NARRATIVE DESCRIPTION Multiple spill incidents have been reported over the operating life of the center. Many spills of hazardous substances entered storm, sanitary, or industrial sewer systems.

01 ☐ P ILLEGAL UNAUTHORIZED DUMPING  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

None observed or alleged.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None observed or alleged.

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

(See Summary).

V. SOURCES OF INFORMATION (Cite specific references e.g. state files, sample analysis reports)

(See Summary).

Preliminary Assessment Report  
for  
Lewis Research Center  
National Aeronautics and  
Space Administration  
Cleveland, Ohio

**EBASCO**

*An ENSERCH Engineering & Construction Company*

## SUMMARY

### 1. VISIT

During the three-day period, 22-24 February 1988, Ebasco Services representatives visited the National Aeronautics and Space Administration (NASA) research facility at Lewis Research Center, Cleveland, Ohio. The purpose of the visit was to complete the Preliminary Assessment EPA requires of federal facilities listed on the Federal Facilities Docket. Ebasco representatives on hand included Mr. Stephen Turner, and Mr. Michael Finton. Dr. Julian Earls, Dr. Albert Smith and Mr. Michael Mapp represented NASA, LeRC.

The NASA Lewis Research Center is located adjacent to the Cleveland Hopkins Airport on the south side of Cleveland, Ohio. The facility was opened initially in 1941 as the National Advisory Committee for Aeronautics (NACA) Aircraft Engine Research Laboratory. After NASA was formed in 1958, the facility has become the lead center for research and technology development in aircraft propulsion, space propulsion, space power and satellite communications. The 100 building facility is bounded on the east by the airport. Abrams Creek cuts a deep ravine through the facility and adjoins Rocky River which is on the west edge of the property. A metropolitan park is across the river and private residences are located to the southwest.

Due to the nature of the operations being in the area of research and development, waste streams are variable but relatively low volume. Acids and solvents are used for parts and equipment cleaning. There are also small amounts of low-level radioactive wastes generated. There are several PCB containing transformers which involve handling and waste generation of PCBs. Mercury is prevalent in pressure gauges and diffusion pumps at the facility. Hazardous liquid wastes are accumulated in drums at various locations throughout the facility and eventually sent to Building 415 for interim storage. Lab packed wastes consisting of large numbers of small bottles of various wastes are also prevalent due to the many research and development activities occurring at LeRC.

### 2. AREAS OF CONCERN

Dr. Albert Smith, Chief of Environmental Health and Chemical Analysis Branch at LeRC, was able to provide information on LeRC's past and current hazardous waste management practices. We have included two site maps, one of the entire LeRC facility and one that details the "South 40" area (Attachment 1). Areas of concern, for which there are data gaps sufficient enough to warrant further investigation on LeRC's part include the following:

- South 40 Area has several potential sources of contamination based on the activities described and observed in the area. In addition to review of files provided by Dr. Albert Smith, Chief of the Environmental Health and Safety Analysis Branch and other NASA staff, an automobile (windshield) site visit was conducted in the "South 40" area. Personnel in attendance during the site visit included Mr. Stephen Turner and Mr. Michael Finton both representing Ebasco Services and Dr. Albert Smith, Mr. Michael Mapp and Joseph Mills, all three from NASA LeRC. Areas of concern observed during the site visit that require attention or for

which there are data gaps sufficient enough to warrant further investigation on LeRC's part in the "South 40" area include the following:

- Building 209 was the first area in South 40 observed. There were "empty" drums positioned on their sides and stacked. There were used car batteries piled on wooden pallets next to the drums. This area is adjacent to a coal pile. The entire area drains into a retaining basin. Storage of drums and batteries on the ground outside without secondary containment represents a potential threat to the environment.
- Salvage Area adjacent to Substation A was observed to have approximately 30 "empty" drums positioned on their sides and stacked four high. The practice of storing drums in such a manner represents a potential threat to the environment.
- Substation A was observed by Michael Finton representing Ebasco and Vernon Parrish, Coordinator of PCBs for LeRC during separate site visit the same day, February 24, 1988. Three drums were positioned on their side at the entrance to Substation A. A 5200 gallon capacity transformer was found to be leaking PCBs of greater than 500 ppm concentration coating the outer surface of the transformer and dripping onto the ground. This situation represents a threat to the environment.
- Contractor Trailer Storage Area was found to be a potential problem with approximately 50 drums labelled "corrosive" and "zinc chloride" stored on the ground, stacked with some positioned on their sides. This situation represents a potential threat to the environment.
- Cleveland Hopkins Airport which is adjacent to South 40 has two corroded tanks and some drums stored outside on the ground with no secondary containment. The area where these items are stored drains onto the South 40 and represents a potential threat to the environment and may impact the "South 40".
- A Second Metal Salvage Area near the landfill area has tankage and equipment stored on the ground. There is no record that these items were decontaminated prior to being placed in South 40. This situation represents a potential threat to the environment.
- Landfill area was observed to have an open, exposed slope that drains to Abrams Creek. A yellow drum was observed on the slope. A drainage ditch runs through the center of the fill area. The airport has contributed to wastes being placed in the landfill and it is difficult to distinguish the boundary between properties. There is no record of the types or quantities of wastes deposited in the landfill. There is also no record of the dates the landfill was actively being utilized, however, NASA staff indicated its usage occurred from 1945 to 1970. The landfill represents a potential threat to the environment.
- Fire Training Pit was found to be no longer present on the landfill although it was observed in a photograph of South 40 taken in 1987 (see Attachment 2). There is no record of what was done to close and

secure the pit. This represents a potential threat to the environment.

- Salt Storage Building and Pesticide Trailers were observed during the site visit. There is indication in the 1987 photograph of South 40 that there may be some distressed vegetation from drainage from the area where these items are located. This situation represents a potential threat to the environment.

Four other areas observed during the site visit that are areas of concern and require further investigation include:

- Building 415 which is used for storage of hazardous feedstocks as well as hazardous wastes in drums was found to be an area of concern. Drums were found to be outside secondary containment, extremely hazardous materials (hydrazine) was found to be stored next to mixed wastes, the entire facility needs proper containment systems with no monitoring or sampling program. This is an area of great concern which requires immediate attention.
- Buildings 109 and 136 and the areas adjacent to these buildings were found to be a potential contaminant source due to improper storage of hazardous substances and wastes. Several corroded drums were observed stored outside; four diffusion pumps spray painted "MERCURY" were also stored in the area; there were also six drums of mixed hazardous wastes stored outside. None of these items was stored within a secondary containment area which poses a threat from possible leakage contaminating soil and surface and groundwater. This area requires additional investigation.
- Basins 1, 2 and 3 of the industrial waste treatment system appear to have undergone recent renovation including sealing cracks. There is no monitoring or sampling done adjacent to the basins to assure they are not impacting the environment.
- Substation E, although it appears that a PCB spill that occurred in March, 1987 was properly handled, no sampling and analysis of the affected area was conducted. Further investigation is warranted.

There are numerous potential sources of groundwater contamination. Presently there are no monitoring wells installed at the facility to know if groundwater has been impacted. The sources include the South 40 Area, Buildings 415, 109, 209 and the Basins 1, 2 and 3. Attention should be given to determining if the various activities at these locations plus other potential sources such as the sewers, underground tanks, spills, etc. have contaminated groundwater.

### 3. SITE INSPECTION RECOMMENDATIONS

We recommend several follow-on site investigations at LeRC. Specifically, LeRC needs to take the following actions:

- Perform an expanded SI in the "South 40 Area" to more clearly define the extent of contamination of soils and ground and surface waters from the multiple sources identified in the area, including:

- Landfill (no record of what was disposed)
- Fire Training Pit (no record of its removal or cleanup)
- Scrap Area (next to landfill)
- Contractor Trailer Storage Area (drums)
- Tanks and Drums on Cleveland Hopkins Airport Property
- Two Coal Piles
- Building 209 (drums and batteries)
- Substation A (PCBs on ground)
- Scrap Area next to Substation A (drums)
- Salt Storage Shed
- Pesticide Storage Trailers
- Sampling of soils, ground and surface waters in the area between Buildings 109 and 136.
- Sampling of soils, ground and surface waters in the area of Building 415.
- Sampling hard surfaces and soil that were impacted from the PCB spill at Substation E.

**M. Unstable Containment of Wastes**

Generally poor housekeeping practices in regards to hazardous waste drum handling/storage and "empty" drum storage such as drums stored outside with no secondary containment.

1. Building 209 - Drums stacked on their sides next to fence (also in scrap yard), batteries on ground next to fence.
2. Contractor Trailer Storage Area - Drums labelled "corrosive" and "zinc chloride" are stored on ground, some on their sides.

[COMMENT FROM LeRC: "Drums which were labelled 'corrosive' and 'zinc chloride' are empty and were probably purchased to store other waste."]

3. Metal Scrap Area (South 40) - Tankage and equipment stored with no record of being decontaminated.
4. Building 415 - Refrigerant gas canisters and five black drums on their sides; one 10-gallon acid-type canister, one 35-gallon black barrel and eight hazardous waste containing drums all outside the secondary containment area. Containment curbs not continuous. Some drums not properly labelled. No fire extinguishing system; drums stacked; gas canisters not chained; feedstock materials and wastes in same storage area; and extremely hazardous substances (hydrazine) stored at the back of the firing range area (IMMEDIATE ATTENTION REQUIRED). Building 415 not in compliance with RCRA for storage of hazardous wastes.

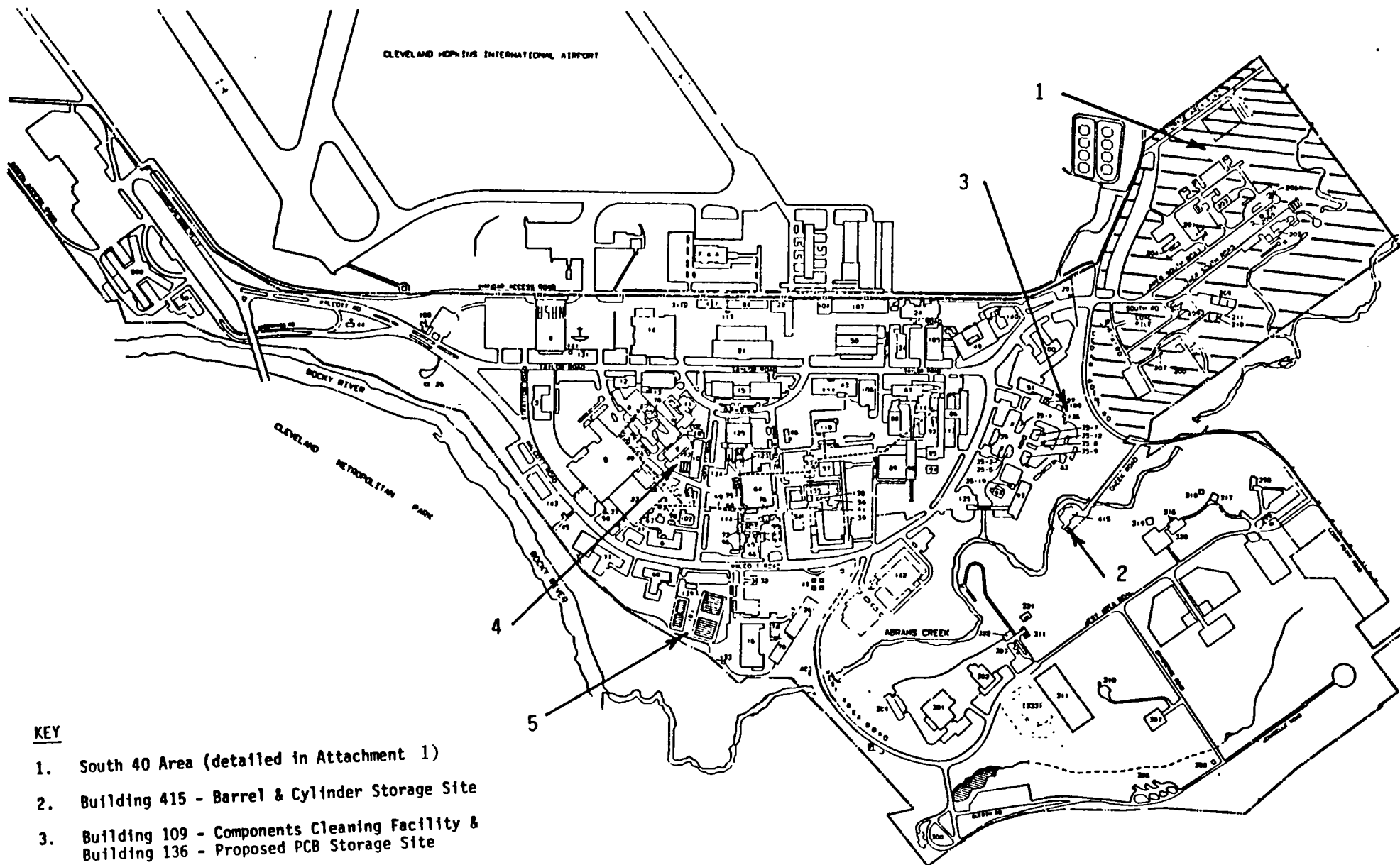
[COMMENT FROM LeRC: "Firing range area precautions include a barrier wall and firing is done downrange away from 415."]

5. Buildings 109 and 136 - Several corroded drums stored outside; four diffusion pumps spray painted "Mercury" stored on ground with no indication that they have been decontaminated; several drums stored outside with no secondary containment.

[COMMENT FROM LeRC: "Diffusion pumps marked 'mercury' stored on the ground were so marked since they were used in a propulsion system that used mercury. Analysis on the inner tank parts of these tests were below EPA toxicity levels."]

6. Building 35 - Several drums stored outside; mixed wastes under roof but no secondary containment.
7. Buildings 301 and 302 - Hazardous waste drums stored under roof but no secondary containment; damaged drums outside (one on its side) gas canisters not chained.

8. Basins 1, 2 and 3 - Evidence of cracking in basins (sealed).
9. Substation A - Evidence of PCBs in concentration greater than 500 ppm leaking from 5200 gallon capacity transformer. Observed discolored gravel on ground from transformer dripping PCBs.



# **KEY**

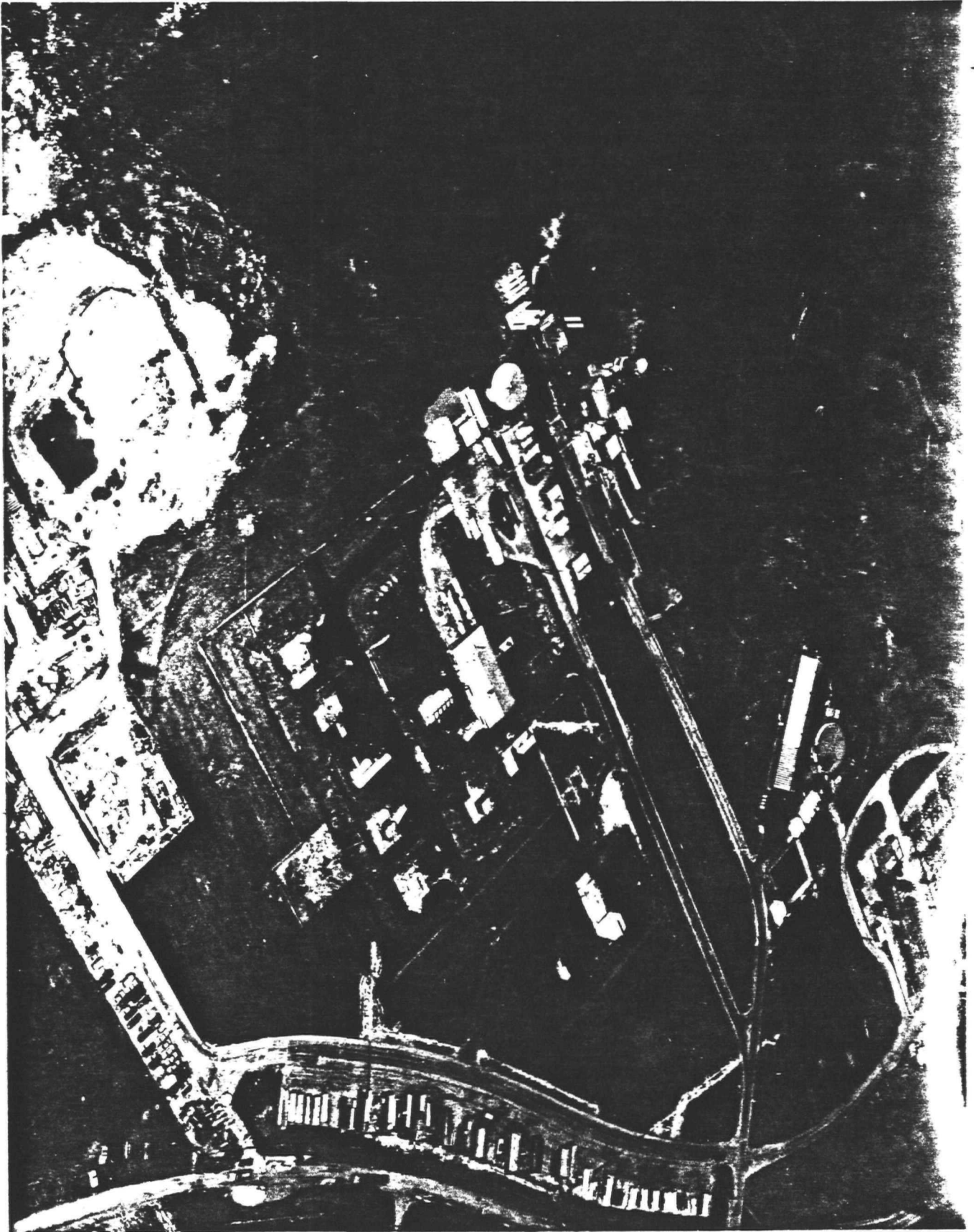
1. South 40 Area (detailed in Attachment 1)
2. Building 415 - Barrel & Cylinder Storage Site
3. Building 109 - Components Cleaning Facility & Building 136 - Proposed PCB Storage Site
4. Substation E
5. Basins 1, 2 and 3

## **LEGEND**

- BAKER LEWIS RESEARCH CENTER
- CHUTE LINE
- AIR P. S. L. TIE LINES
- PUMP
- WATER GROUND CANAL

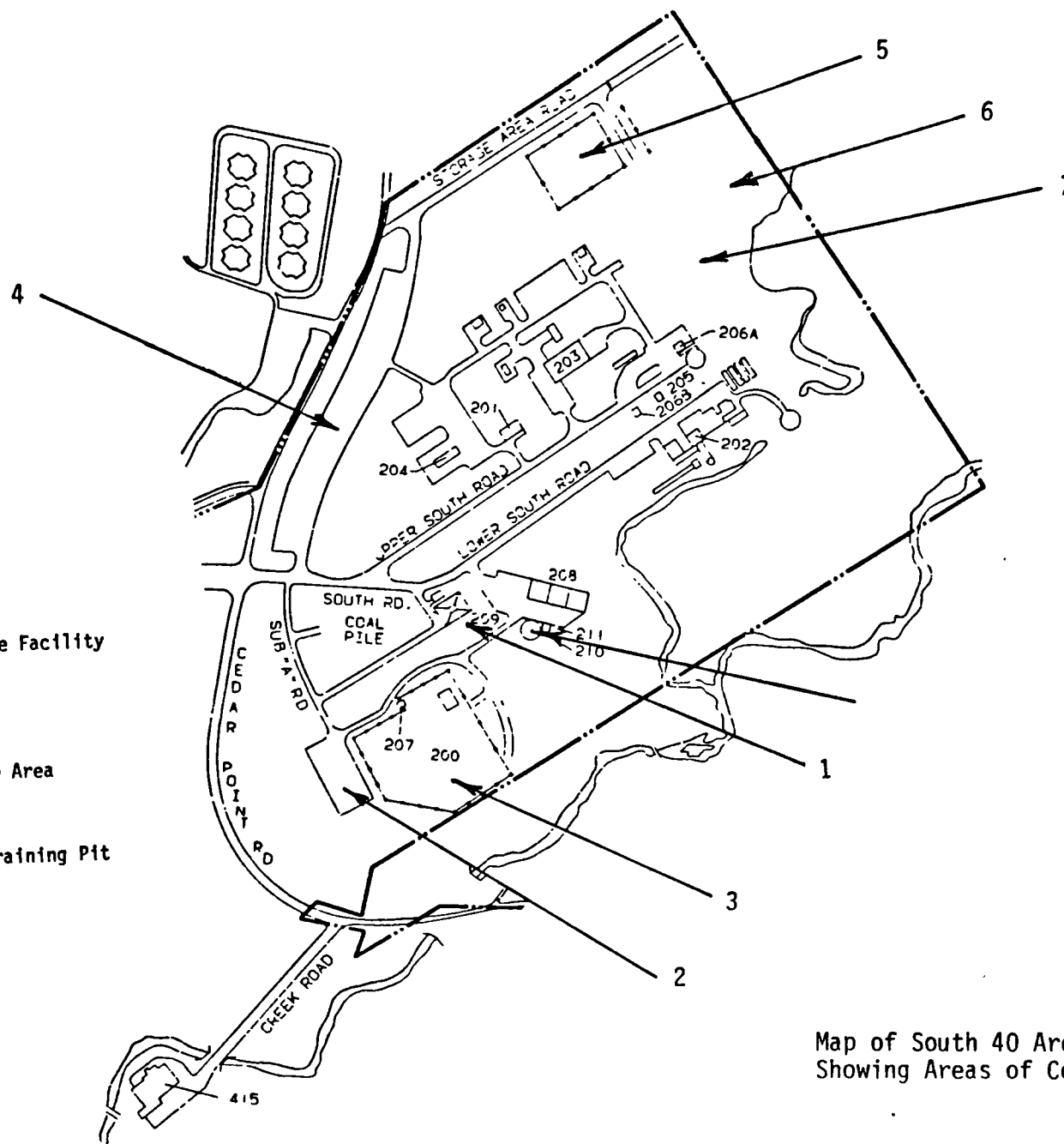
Map of Lewis Research Center  
Showing Areas of Concern

7-1  
NASA  
C-87-4860



KEY

1. Building 209 - Coal Storage Facility
2. Salvage Area 1
3. Substation A
4. Contractor Trailer Storage Area
5. Salvage Area 2
6. Location of Former Fire Training Pit
7. Landfill Area



Map of South 40 Area  
Showing Areas of Concern

PERSONNEL CONTACT LISTING

<u>Name</u>	<u>Title</u>	<u>Years at LeRC</u>
Dr. Julian Earls	Chief of Health, Safety and Security Division	23
Dr. Albert Smith	Chief of Environmental Health and Chemical Analysis Branch	26
Michael Mapp	Deputy Chief of Environmental Health and Chemical Analysis Branch	3
Edward Stevenson	Facilities Planning	25
David Kuivinen	Asbestos Abatement Program Manager	26
Vernon Parrish	Coordinator of PCBs	27
Andy Szuhai	Chief of Facilities Operations and Maintenance Division	39
Tom Dilling	Contractor Representative for Cortez III	15
Robert Billy	Equipment Specialist	36
Bruce Block	Area Five Safety Committee Chairman	26
Amy Bower	Industrial Hygienist	5
Robert Allen	Fire Chief	11

## References

1. Obtained from Environmental Health and Chemical Analysis Branch (contact Albert Smith):
  - Environmental Compliance Audit Report, December 1986
  - Environmental Resource Document, May 1983
  - Plans for Central Chemical Storage Facility
  - Spill Occurrence Reports
  - Noise Survey Report
  - Permits for Fire Training Pit
  - RCRA Permit Application
  - CERCLA Notification
  - NPDES Notices of Violation
2. PCB Files from Vernon Parrish, Contract Officer's Representative
3. Obtained from Cortez III files in Building 415 (onsite feedstock and waste handling contractor)
  - 1987 and 1988 Manifests
  - Inventory of Lab Pack Wastes
  - Feedstock Inventory
4. Conversations between Ebasco representatives, Albert Smith, Michael Mapp, Ed Stevenson and Vern Parrish.

**F. Contamination of Soil**

1. PCBs leaking from transformer at Substation A, ground stained from PCBs dripping off transformer.
2. Fire Training Pit was source of staining and contaminating soil (see photograph of "South 40" area from 1987, Attachment 2).
3. Numerous spill incidence reports found in records which may have potentially impacted soils.
4. Several areas where improper storage of drums, used tanks and equipment potentially contaminated with hazardous substances observed in "South 40" area, Buildings 415, 209, 109, 136, 301, 302 and 35 represent situations that could potentially contaminate soils.